

The first two species occur throughout the United States and Canada, the last species does not occur in the United States or Canada, but is found in the West Indies and Mexico.

PURDUE UNIVERSITY,
LAFAYETTE, INDIANA

ANOTHER RESPIRATION EXPERIMENT

BY JEAN BROADHURST

For two years we have been using the following device for showing that green plants give out CO_2 . Many methods have already been described; this is added only because it is so easily put up and because the contrast with the control is most marked. An air-tight joint made with water is more certain than when made with vaseline, etc.; it is also less "mussy."

A dish, *A*, is partly filled with water. In it are placed a glass vessel for lime (or barium) water, *B*, supported on any solid support, *C*, to raise it above the water in *A*. A leaf (geranium) may be placed over *B* with the petiole extending into the water

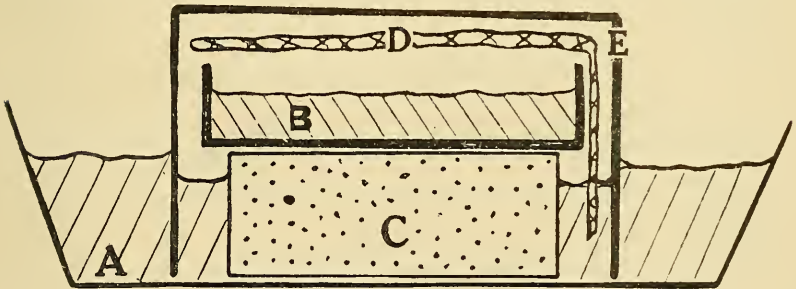


FIG. 1.—*A*, a dish or pan containing water for making an air-tight joint around *E*.
B, glass containing lime-water.
C, support.
D, a geranium leaf.
E, a glass dish enclosing *D* and *B*.

in *A*. (The petiole is, of course, not necessary, but students seem to feel that the conditions are more normal when the petiole has access to water in this way.) Over all is inverted a crystallizing dish, *E*, which should be but slightly wider in diameter than

B, making very little air enclosed in the space under *E*. An inverted vessel rarely sits firmly when inverted over water and a bent tube may be used to draw out some of the air under *E*. This will make *E* more steady, and will also make the water rise in *E* and lessen the air space. If too much air is drawn out, and the water around *B* rises too high, it will be difficult to remove *E* at the end of the experiment without the risk of causing an overflow into *B* and breaking the heavy film that forms on the surface of the lime water.

The control is exactly the same, except the leaf is omitted. The air space under *E* is so small that in the control but a partial, delicate film is formed on the lime water, contrasting strongly with the heavy one formed in 12 to 24 hours by one green leaf.

TEACHERS COLLEGE

NOTES ON RUTACEAE — VI. SPECIES OF SPATHELIA*

BY PERCY WILSON

The species of *Spathelia* L. are confined, in so far as known, to the West Indies, with a very doubtful species reported from Mexico.

Of the five recognized species of *Spathelia*, *S. simplex* and *S. glabrescens* are endemic in the island of Jamaica, while *S. cubensis* is known only from the province of Oriente, Cuba, and *S. Brittonii* from the province of Pinar del Rio. *S. vernicosa*, originally described from specimens collected in eastern Cuba, is also found on Cat Island, Bahamas.

They are slender unarmed trees one to twenty-four meters tall, with simple unbranched trunks conspicuously marked with leaf-scars, and bearing pinnate leaves, and large panicles with showy purplish or scarlet flowers at the summit. The ovary is usually 3-celled, and the fruit normally 3-winged.

It is apparent from observations made by several students of West Indian plants, that wherever species of *Spathelia* are found there are always present, in a dead or dying condition, a few speci-

* Notes on Rutaceae—V was published Bull. Torrey Club 38: 295-297. 6 JI 1911.